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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/070,721	07/16/2002	Philip Hall	THC.P.US0003	9695

7590

09/09/2004

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EXAMINER

CHORBAJI, MONZER R

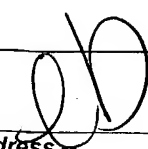
ART UNIT

PAPER NUMBER

1744

DATE MAILED: 09/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/070,721	HALL, PHILIP	
	Examiner	Art Unit	
	MONZER R CHORBAJI	1744	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 June 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 6-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 6-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 July 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This final office action is in response to the amendment received on 06/18/2004

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 1-2, 4, 6-15, and 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pellin (U.S.P.N. 4,102,654) in view of Liebeskind et al (U.S.P.N. 6,632,805).

With respect to claims 1, 6 and 14, the ('654) reference discloses a method (columns 2-3) and an apparatus (1) for purifying air including the following: withdrawing air from an enclosed space (col.3, lines 56-63) through an air extraction vent (2) by using means (6, fan system), ducting for connecting all the components (unlabeled duct lines), passing the air over surfaces impregnated with an antimicrobial agent (col.2, lines 31-34, the surfaces of filter 5), through UV radiation

(col.2, lines 53-55, an ultraviolet illumination section), and returning the air to the enclosed space (3). In addition, the apparatus includes an airflow conditioning section (5). However, with respect to claims 1 and 6, the ('654) reference fails to disclose coating the surfaces with a non-volatile antimicrobial agent and with respect to claim 14, the ('654) reference only fails to teach the concept of coating. The ('805) reference, which is in the art of designing antimicrobial coatings (abstract), teaches incorporating 3-(trimethoxysilyl)-propyl dimethyloctadecyl ammonium chloride (col.32, lines 65-67 and col.33, lines 1-7, this compound is considered to be the non-volatile antimicrobial agent) into coating applications that includes filters (col.33, lines 24-27). As a result, it would have been obvious to one having ordinary skill in the art at the time the invention was made to substitute the antimicrobial agent disclosed in the ('654) reference by the non-volatile antimicrobial agent since such an agent is non-toxic, non-flammable, simple, economical and operable over a wide variety of pH ranges (col.5, lines 7-10) as taught by the ('805) reference.

With respect to claims 2, 7-8, 15 and 17-18, the ('654) reference teaches the following: filtering the withdrawn air (4), a pre-sterilization section (unlabeled region beginning right after 6 and including 7' and 7"), the airflow conditioning includes a filter (unlabeled section includes 5), airflow conditioning section includes a fixed, multi-bladed directional fan (6), and the airflow conditioning section further includes planar members (intrinsic edges of filter 5) positioned at an angle (90 degrees) to the air flow (perpendicular to 5).

With respect to claims 4, 9-13 and 19-20, the ('805) reference teaches coating surfaces of a filter with 3-(trimethoxysilyl)-propyl dimethyloctadecyl ammonium chloride (for example, a quaternary amine group in a silane, col.32, lines 65-67 and col.33, lines 1-7) and further coating surfaces of HVAC systems (col.36, lines 32-35) such that the pre-sterilization section of the ('654) reference is included in this teaching.

4. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pellin (U.S.P.N. 4,102,654) in view of Liebeskind et al (U.S.P.N. 6,632,805) and further in view of Smith (WO 92/20974).

With respect to claim 3, both the ('654) reference and the ('805) reference fail to disclose means for causing turbulence to the incoming airflow. The (WO) reference discloses means for causing turbulence to the incoming airflow (figure 6, 20 and 22). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method of the ('654) to include turbulence means step in order to achieve a substantially even redistribution of the velocity and pressure of the air stream in the transverse direction (abstract, lines 1-4).

5. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pellin (U.S.P.N. 4,102,654) in view of Liebeskind et al (U.S.P.N. 6,632,805) and further in view of Eo Ong (GB 2,212,370).

With respect to claim 16, both the ('654) reference and the ('805) reference fail to teach using an activated charcoal filter. However, the (GB) reference, which is in the art of purifying air (abstract), teaches the use of an activated carbon filter (page 2, lines 11-12). Note that charcoal and carbon are synonyms. As a result, it would have been

obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus of the ('654) reference to include an activated carbon filter as taught by the (GB) reference in order to remove disagreeable odor (page 2, lines 12-13).

Response to Arguments

6. Applicant's arguments with respect to claims 1-4 and 6-20 have been considered but are moot in view of the new ground(s) of rejection.

The ('805) reference is used to show that the concept of coating filters with a non-volatile antimicrobial agent such as 3-(trimethoxysilyl)-propyl dimethyloctadecyl ammonium chloride (for example, a quaternary amine group in a silane, col.32, lines 65-67 and col.33, lines 1-7) is known. Further, the ('805) reference teaches coating surfaces of HVAC systems (col.36, lines 32-35). Such a teaching includes any surface of HVAC systems.

On page 7 of the Remarks section, applicant argues that, "The Smith publication does not teach, disclose, or suggest a non-volatile antimicrobial coating." The (WO) reference is used only for teaching means for causing turbulence to the incoming airflow and not for the non-volatile coating limitation.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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8. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MONZER R CHORBAJI whose telephone number is (571) 272-1271. The examiner can normally be reached on M-F 6:30-3:00.

10. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, ROBERT J WARDEN can be reached on (571) 272-1281. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

11. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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09/06/2004

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